--13. A signal transmission apparatus comprising:

a receiver operable to receive an input signal containing a first data stream of n values and a second data stream, where n is an integer;

a modulator operable to modulate a carrier wave with the received input signal so as to produce a modulated signal having symbols each representing a corresponding one of m signal points in a signal space, where m is an integer, said modulator including

a divider operable to divide the m signal points into n signal point groups,

an assignor operable to assign n values of the first data stream to the n signal point groups, respectively, and to assign data of the second data stream to the signal points of each of the n signal point groups, and

a shifter operable to shift the signal points of the received signal to other positions in the signal space such that a distance between any closest two signal points of any adjacent two signal point groups becomes $2\delta * S$ and the signal points in each of the signal point groups are allocated in the signal space at equal intervals, and such that the m signal points are distinguishable from one another in the signal space by a first set of thresholds, which divide the signal space into m regions, and the n signal point groups are distinguishable from one another in the signal space by a second set of thresholds, which divide the signal space more coarsely than the first set of thresholds into n regions, where 2δ is a distance between the closest two signal points of the adjacent two signal point groups when the m signal points are allocated in the signal space at equal intervals, and S is a shift coefficient which is more than one;

a transmitter operable to transmit the modulated signal.

14. A signal transmission apparatus according to claim 13, wherein each of the first and second data streams carries information constituting a television image.

15. A signal receiving apparatus comprising:

a receiver operable to receive a signal having symbols each representing a corresponding one of m signal points in a signal space, where m is an integer, wherein the m signal points are divided into n signal point groups each containing m/n signal points, and the signal points are shifted to other positions in the signal space so that a distance between any closest two signal points of any adjacent two signal point groups is $2\delta * S$ and the signal points in each of the signal point groups are allocated in the signal space at equal intervals and the m/n signal points in each of the n signal point groups are distinguishable from one another in the signal space by a first set of thresholds and the n signal point groups are distinguishable from one another in the signal space by a second set of thresholds, where 2δ is a distance between the closest two signal points of the adjacent two signal point groups when the m signal points are allocated in the signal space at equal intervals, and S is a shift coefficient which is more than one, and wherein the signal contains a first data stream, which is assigned to the n signal point groups, and a second data stream, which is assigned to the m/n signal points of each of the n signal point groups;

a demodulator operable to distinguish the n signal point groups from one another by the second set of thresholds and demodulate values of the distinguished n signal point groups to obtain reconstructed data of the first data stream, and to distinguish the m/n signal points in each of the n signal point groups by the first set of thresholds and demodulate values of the distinguished m/n signal points in each of the n signal point groups to obtain reconstructed data of the second data stream; and

an output circuit operable to combine the reconstructed data of the first and second data streams from said demodulator to obtain reconstructed data from the received signal.

16. A signal transmission apparatus according to claim 15, wherein each of the first and second data streams carries information constituting a television image.

17. A signal transmission system comprising:

a first receiver operable to receive an input signal containing a first data stream of n values and a second data stream, where n is an integer;

a modulator operable to modulate a carrier wave with the received input signal so as to produce a modulated signal having symbols each representing a corresponding one of m signal points in a signal space, where m is an integer, said modulator including

a divider operable to divide the m signal points into n signal point groups,

an assignor operable to assign n values of the first data stream to the n signal point groups, respectively, and to assign data of the second data stream to the signal points of each of the n signal point groups, and

a shifter operable to shift the signal points of the received signal to other positions in the signal space such that a distance between any closest two signal points of any adjacent two signal point groups becomes $2\delta * S$ and the signal points in each of the signal point groups are allocated in the signal space at equal intervals, and such that the m signal points are distinguishable from one another in the signal space by a first set of thresholds, which divide the signal space into m regions, and the n signal point groups are distinguishable from one another in the signal space by a second set of thresholds, which divide the signal space more coarsely than the first set of thresholds into n regions, where 2δ is a distance between the closest two signal points of the adjacent two signal point groups when the m signal points are allocated in the signal space at equal intervals, and S is a shift coefficient which is more than one;

a transmitter operable to transmit the modulated signal;

a second receiver operable to receive the modulated signal;

a demodulator operable to distinguish the n signal point groups from one another by the second set of thresholds and demodulate values of the distinguished n signal point groups to obtain reconstructed data of the first data stream, and to distinguish the m signal points in each of the n signal point groups by the first set of thresholds and demodulate values of the distinguished m signal points in each of the n signal point groups to obtain reconstructed data of the second data stream; and

an output circuit operable to combine the reconstructed data of the first and second data streams from said demodulator to obtain reconstructed data from the received signal.

18. A signal transmission system according to claim 17, wherein each of the first and second data streams carries information constituting a television image.

19. A signal transmission method comprising:

receiving an input signal containing a first data stream of n values and a second data stream, where n is an integer;

modulating a carrier wave with the received input signal so as to produce a modulated signal having symbols each representing a corresponding one of m signal points in a signal space, where m is an integer;

dividing the m signal points into n signal point groups;

assigning n values of the first data stream to the n signal point groups, respectively, and assigning data of the second data stream to the signal points of each of the n signal point groups;

shifting the signal points of the received signal to other positions in the signal space such that a distance between any closest two signal points of any adjacent two signal point groups becomes $2\delta * S$ and the signal points in each of the signal point groups are allocated in the signal space at equal intervals, and such that the m signal points are distinguishable from one another in the signal space by a first set of thresholds, which divide the signal space into m regions, and the n signal point groups are distinguishable from one another in the signal space by a second set of thresholds, which divide the signal space more coarsely than the first set of thresholds into n regions, where 2δ is a distance between the closest two signal points of the adjacent two signal point groups when the m signal points are allocated in the signal space at equal intervals, and S is a shift coefficient which is more than one; and

transmitting the modulated signal.

20. A signal receiving method comprising:

receiving a signal having symbols each representing a corresponding one of m signal points in a signal space, where m is an integer, wherein the m signal points are divided into n signal point groups each containing m/n signal points, and the signal points are shifted to other positions in the

signal space so that a distance between any closest two signal points of any adjacent two signal point groups is 2δ * S and the signal points in each of the signal point groups are allocated in the signal space at equal intervals and the m/n signal points in each of the n signal point groups are distinguishable from one another in the signal space by a first set of thresholds and the n signal point groups are distinguishable from one another in the signal space by a second set of thresholds, where 2δ is a distance between the closest two signal points of the adjacent two signal point groups when the m signal points are allocated in the signal space at equal intervals, and S is a shift coefficient which is more than one, and wherein the signal contains a first data stream, which is assigned to the n signal point groups, and a second data stream, which is assigned to the m/n signal points of each of the n signal point groups;

distinguishing the n signal point groups from one another by the second set of thresholds and demodulating values of the distinguished n signal point groups to obtain reconstructed data of the first data stream, and distinguishing the m/n signal points in each of the n signal point groups by the first set of thresholds and demodulating values of the distinguished m/n signal points in each of the n signal point groups to obtain reconstructed data of the second data stream; and

combining the reconstructed data of the first and second data streams to obtain reconstructed data from the received signal.

21. A signal transmission method comprising:

receiving an input signal containing a first data stream of n values and a second data stream, where n is an integer;.

modulating a carrier wave with the received input signal so as to produce a modulated signal having symbols each representing a corresponding one of m signal points in a signal space, where m is an integer;

dividing the m signal points into n signal point groups;

assigning n values of the first data stream to the n signal point groups, respectively, and assigning data of the second data stream to the signal points of each of the n signal point groups;

shifting the signal points of the received signal to other positions in the signal space such that a distance between any closest two signal points of any adjacent two signal point groups becomes 2δ * S and the signal points in each of the signal point groups are allocated in the signal space at equal intervals, and such that the m signal points are distinguishable from one another in the signal space by a first set of thresholds, which divide the signal space into m regions, and the n signal point groups are distinguishable from one another in the signal space by a second set of thresholds, which divide the signal space more coarsely than the first set of thresholds into n regions, where 2δ is a distance between the closest two signal points of the adjacent two signal point groups when the m signal points are allocated in the signal space at equal intervals, and S is a shift coefficient which is more than one;

transmitting the modulated signal;

receiving the modulated signal;

distinguishing the n signal point groups from one another by the second set of thresholds and demodulating values of the distinguished n signal point groups to obtain reconstructed data of the first data stream, and distinguishing the m signal points in each of the n signal point groups by the first set of thresholds and demodulating values of the distinguished m signal points in each of the n signal point groups to obtain reconstructed data of the second data stream; and

combining the reconstructed data of the first and second data streams to obtain reconstructed data from the received signal.--